V

THE NECESSITY OF THE CLINICIAN MAKING THE BEST USE OF LABORATORY FACILITIES IN THE DIAGNOSIS OF VENEREAL DISEASES

Discussion

Dr. David Nabarro said that those of them who were pathologists would sympathise with many of the statements of the author. The condition of specimens sent to the laboratory was often deplorable and they were useless for investigation.

His own experience of cultivation of the gonococcus had been mainly with gonococcal vulvo-vaginitis in children, and with hydrocele-fluid agar it was generally possible in the acute stages to grow the organism. He could not say from his own experience if there were any particular phase of the gonococcus when it should be implanted.

The author had his full sympathy on the question of blood testing because he had suffered much from the condition in which blood had been sent. He had found all-glass syringes to be the most satisfactory for taking the blood. He agreed as to the desirability of uniformity in reporting on the blood, as recommended by the League of Nations Committee; probably after the war there would be a return to a simpler and easily understood report.

It was extraordinary that clinicians had not realised that a negative Wassermann did not necessarlly mean the absence of syphilis. Many appeared to be satisfied with a negative Wassermann, even though they were confident that the case was syphilitic. It seemed to him a great pity that the supervision of the Ministry of Health, which the President was instrumental in establishing some years ago, was no longer operative, for this was very necessary. There were many ways of doing Wassermann tests, good, bad and indifferent, that it was time that the Ministry took charge of the laboratories or supervised them, or at least insisted that a recognised method should be used. The future welfare of the patient was dependent on accurate reports.

Dr. Mary Liston said that with true co-operation between the clinician and the laboratory results would be obtained more speedily, and that progress was sometimes hindered by lack of co-operation.

Changes in body soil varied frequently according to the patient's emotional state, age and dietetic regime. Bacteriologists sometimes tended to overlook these facts. The toxic reactions between tissue soils and bacteria had not yet been worked out completely, but the bacteriologist's preference for a belief in invisible and unknowable living things, while it was easier, was not a scientific approach. All organisms were subject to natural laws of variation, and their characteristics must be altered by growth in or on different tissues. Unless the effects of environment were taken into consideration, mistakes in diagnosis would continue. If the nasal passages were examined in every case of gonorrhœa, the *Micrococcus catarrhalis* along with other bacteria was frequently obtained. This coccus was similar in appear-

ance to the gonococcus and the meningococcus. The only differences were functional ones, which she believed to be due to environmental differences which needed study.

Bacteriologists too often seemed to expect that clinicians should accept their results without question and showed less co-operation than they demanded from clinicians. They did not try to correlate the two sciences of medicine and bacteriology. The bacteriologists told them that the skin formed an efficient barrier against germination, that there was a natural resistance in the body against infection, yet they believed that one or two spirochætes got through an abrasion situated in the skin and that these could multiply rapidly in an hour or two.

She believed that gonorrhœa could be due to material from nasal infections and that the spirochætes may gain admission through the mouth and intestinal canal. Some symptoms of syphilis, *e.g.*, sore throat, headache and snuffiness, indicated the probability of a bacterial sinus infection.

WING-COMMANDER G. L. M. MCELLIGOTT asked whether the author had noticed any difference in the results of the complement fixation test since the general use of sulphonamides. In his experience far fewer positives were recorded even in relapsed cases. He would suggest that this was possibly due to the fact that the antigen had been so rigorously curtailed at the beginning of the disease.

LT.-COL. A. J. KING said that while he had had experience of the author's own careful work, he felt that there were faults of the pathologists as well as of the clinicians. Perhaps the chief fault was the variable standard of work done in laboratories responsible for V.D. pathological work. His own experience had been that to rely upon pathological tests the results of which were variable and inaccurate was a very unsatisfactory matter. That remark applied particularly to that much criticised test, the complement fixation test for gonorrhœa. In expert hands it was very valuable indeed, but there seemed to be very few expert hands in this country.

DR. B. SHANSON asked whether there was any use in any of the venereal diseases for the sedimentation-rate test.

DR. C. HAMILTON WILKIE asked Dr. Price what he considered to be the minimum quantity of cerebrospinal fluid to be collected. Another question related to the giving of brief histories to the V.D. Pathologist. When V.D. Pathologist at Glasgow he often would have found his work simplified if a brief history had accompanied the specimens. It would be an ideal if all senior V.D. Medical Officers had a thorough training in V.D. Pathology. It had been mentioned that serum from venereal ulcers should be kept at a temperature of 37° prior to examination. Was this necessary? He believed that a tube containing *Sp. pallida* had survived several trans-Atlantic journeys.

DR. FORGAN commended to the notice of the Society Dr. Orpwood Price's suggestion for the setting up of a committee to provide an authoritative statement on laboratory aids in the diagnosis and treatment of venereal diseases. He emphasised the necessity nowadays for cultural tests in determining cure of gonococcal infections. The value of many published reports in this country would have been enhanced had they contained bacteriological evidence of cure. The number of civilian laboratories carrying out cultural tests for the gonococcus

was lamentably small, and he believed that the number of military hospitals where such tests could be made might be counted on the fingers of one hand.

COLONEL T. E. OSMOND said that every clinician should serve an apprenticeship in the laboratory. If that were done the clinician would appreciate the difficulties which the pathologist encountered and also the value of the tests. The question of the culture of the gonococcus after sulphonamide therapy was very important, and in his experience and the experience of those with whom he had discussed the subject, the difficulty of growing gonococci after sulphonamide therapy was much greater than in the pre-sulphonamide days. He had come to the conclusion that traces of sulphonamide derivatives in the body tissues possibly inhibited growth. There were organisms in the film—poor ones—but gonococci could not be grown. That was contrary to the experience of the pre-sulphonamide days when gonococci often could be grown when they could not be found in a film.

THE PRESIDENT, Colonel L. W. Harrison, said that the training of clinicians in laboratory work in order to give them a sympathy with the laboratory did pay. His first interest in this subject was when as pathologist at the Military Hospital, Rochester Row, he often received specimens consisting of a few charred remains of blood, with orders to do all kinds of curious things with them. He concluded that the first essential was to train medical officers to take specimens, and this was done in the case of all R.A.M.C. officers on joining as well as during their promotion course some years later. M.O.'s who were trained as specialists were taught how to do Wassermann tests and darkground work.

Whatever else was done, clinicians ought to be well taught in the interpretation of laboratory reports ; as Dr. Price had said, it was not the pathologist's business to diagnose the case, it was for the clinicians to use such evidence as the pathologist gave them.

The author had referred to difficulties arising from the division of work as between clinicians and laboratories. Everybody would agree that it was desirable that Wassermann and complement-fixation tests should be done in laboratories where large numbers were tested, and it was not always possible to have such a laboratory near to a relatively small clinic. On the other hand, for cultural and microscopic work it was desirable that the laboratories should be as near as possible. He had always encouraged the clinician to do his microscopical work in the clinic itself.

Dr. Nabarro had referred to the supervision of laboratories. He was not quite sure if he meant that anything more should be done than was done already. Since about 1922 there had been a sort of supervision of laboratories by the Ministry of Health in the shape of comparisons of the serum tests done by those approved for tests under the V.D. scheme. Colonel Harrison gave a brief description of this testing in which specimens collected at St. Thomas's Hospital were tested simultaneously in the official laboratory and in the collaborating laboratories, special steps being taken to prevent either of the pathologists concerned from learning the clinical data. When all the results in a given comparison had been furnished, they were put together with the clinical data, and both pathologists were presented with both sets and an analysis. He believed that it had paid very well. Previously

there were about as many methods of doing the Wassermann test as there were laboratories, and every pathologist believed that his method was as good as any and better than most, but many had written to say how much they appreciated these comparisons as they forced them to review their methods.

DR. NABARRO asked if this arrangement was still in existence.

THE PRESIDENT replied that it was suspended at present but it would go on after the war. The pathologist who was employed on this work was still in the service of the Ministry, and he hoped he would remain.

Dr. Wilkie had asked whether it was necessary for the spirochæte to be at 37° C. Some years ago an interesting experiment took place in which he collaborated with the Toronto Public Health Laboratory. They were interested in ascertaining whether serum from early lesions which had travelled a long distance in a capillary tube would be suitable for examination for *S. pallida* at the end. The capillary tubes were filled in London from a number of cases of primary syphilis. They were posted to Toronto, where they were examined, and the spirochæte was found not only recognisable but still motile. Then one tube from each consignment was posted from Toronto back to London and the spirochæte was still found to be recognisable. It was posted back, no longer in a capillary tube but between a slide and cover slip, and the spirochætes were again found ; once more there was a passage across the Atlantic and still the spirochætes were recognised and had remained motile. Thus one could rely on a capillary tube as a safe medium for transporting specimens.

As to blood in the cerebrospinal fluid, if the patient's blood gave a negative reaction, he did not think the specimen of spinal fluid should be thrown away on this account, because it might give a negative reaction in spite of containing blood. Of course it was desirable to exclude blood, but the specimen was still of some use.

Colonel Osmond had mentioned the difficulty of growing cultures of the gonococcus after sulphonamide treatment. At the last meeting he had referred to papers by Professor Miescher, and he had recently seen another of his reporting that the gonococci from relapsed cases grew extremely slowly.

Lastly he wanted to make a plea to the pathologist to help them still more with the culture medium. Could not the methods of growing gonococci, good as they were at present, and wonderful as they were in comparison with smears even in fresh cases, be improved ?

DR. ORPWOOD PRICE, in reply, said that he was glad to have the support of Dr. Nabarro. He felt that the supervision of the V.D. laboratories was most important and he was glad to hear that it was to be continued.

On the question of the sedimentation rate, when at St. Thomas's he found that as a help in the diagnosis or evaluation of treatment it was not of much use. It went on the usual lines—where there was destruction of tissue there was an increase of rate—but it had no practical use, and he concluded that it was not worth continuing the investigation.

The effect of sulphonamide treatment in gonorrhœa on the C.S.F. had been raised. He had found that if sulphonamide treatment was started in the earliest stages of the disease positive results were rarer

than in the old days, when 99 per cent. would become positive. Following sulphonamide treatment it was not uncommon for the test to remain negative throughout the whole period of treatment, and when sera did become positive the number of strongly positive reactions were fewer than of yore.

Lt.-Col. King had raised the question of the variable standard of V.D. pathology. That was a matter of the training of those concerned. Too often V.D. pathology was pushed up into a corner as something not quite nice and regarded as a nuisance. Few people really took an interest in it. One should get things done rather better than they are at present.

Dr. Wilkie had raised a question which Colonel Harrison had already answered. The use of a thermos flask had been mentioned because in very cold weather specimens might lie about station platforms and possibly become frozen. A mail bag might also be set down against a hot pipe in a post office and again cause trouble.

The minimum quantity of cerebrospinal fluid for testing depended on what was required. For a Wassermann test 1 c.c. would be enough, but for protein estimations, etc., more was necessary.

He agreed with Colonel Osmond on the difficulty of demonstrating gonococci after sulphonamide treatment. Before sulphonamide therapy many prostatic cultures were done, and out of 20 vesiculo-prostatic plates a day at least 4 or 5 would yield positive cultures. To-day if out of 20 plates one was positive, it was felt to be an uncommonly good result. The medium was the same, the inoculation was the same, and all the conditions were the same except the treatment.

Colonel Harrison had raised the question of training clinicians in laboratory technique. One danger, at least up to the war, was not only of clinicians being untrained in laboratory work but of laboratory people not being trained sufficiently in clinical work. Pathologists would be more useful if they had previously done a reasonable amount of clinical work. Before the war there was a danger of specialising too soon. Bacteriology or some highly specialised branch of pathology was commenced with little or no effective clinical experience.

He thought that of all the organisms one could attempt to cultivate the gonococcus was one of the most disappointing. In spite of improvements in various media, cultures from case of chronic gonorrhœa were still extremely variable. Unfortunately one frequently got what appeared to be colonies of perfectly good gonococci but these were mixed up with streptococci and staphylococci, and any attempt to get a pure culture was perfectly hopeless. He had tried all sorts of methods but he had not been able to solve that problem yet. We must go on trying and hope that one day a useful differential culture medium would be obtained.